

5/12

|                                  |                     |             |
|----------------------------------|---------------------|-------------|
| <b>DART AEROSPACE LTD</b>        | <b>Work Order:</b>  | 22472       |
| <b>Description:</b> Handle Label | <b>Part Number:</b> | D3381-1     |
| <b>Dwg:</b> D3381 Rev. A         | <b>Qty:</b>         | 20          |
|                                  |                     | Page 1 of 1 |

| Step | Location | Procedure   | By  | Date     | Qty |
|------|----------|---|-----|----------|-----|
| 1    | DC       | Issue Traveler  | JA  | 05.02.16 | 20  |
| 2    | PG       | Issue P/O: <u>2604575</u><br>Make as per Dwg D3381<br>Red letters and logo on white adhesive back vinyl<br>Possible Manufacture: From 3M 7 mil masking film # 8522CP or<br>Avery IPM # 2031<br>Possible Supplier: Studio Lettrage<br><b>Material release note is required</b> | U   | 05.02.17 | 20  |
| 3    | RG       | Receive and Inspect for transit damage<br><b>Enure material release note is attached</b>  | CL  | 05/02/18 | 20  |
| 4    | QC6      | Inspect dimensions as per Dwg D3381   | U   | 05.02.22 | 20  |
| 5    | ST       | Identify and Stock  | CL  | 05/02/22 | 20  |
| 6    | AC       | Cost / part: <u>6.68</u>  | SUC | 05.02.23 | 20  |
| 7    | DC       | Close W/O <u>7.15</u><br>Inspect Level 21   | JA  | 05.02.23 | 20  |

| Rev | Date     | Change    | Revised By | Approved           |
|-----|----------|-----------|------------|--------------------|
| A   | 05.01.27 | New issue | KJ/JLM     | <i>[Signature]</i> |

RELEASED  
*[Signature]* 05-01-27

| W/O: |      | WORK ORDER CHANGES |    |      |     |                                 |                          |
|------|------|--------------------|----|------|-----|---------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   | By | Date | Qty | Approval<br>Mfg / Design<br>Mgr | Approval<br>QC Inspector |
|      |      |                    |    |      |     |                                 |                          |
|      |      |                    |    |      |     |                                 |                          |

| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                             |                                  |                |                           |                        |                          |
|------|------|----------------------------------|-----------------------------|----------------------------------|----------------|---------------------------|------------------------|--------------------------|
| DATE | STEP | Description of NC<br>Section A   | Corrective Action Section B |                                  |                | Verification<br>Section C | Approval<br>Design Mgr | Approval<br>QC Inspector |
|      |      |                                  | Initial<br>Design Mgr       | Action Description<br>Design Mgr | Sign &<br>Date |                           |                        |                          |
|      |      |                                  |                             |                                  |                |                           |                        |                          |
|      |      |                                  |                             |                                  |                |                           |                        |                          |
|      |      |                                  |                             |                                  |                |                           |                        |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

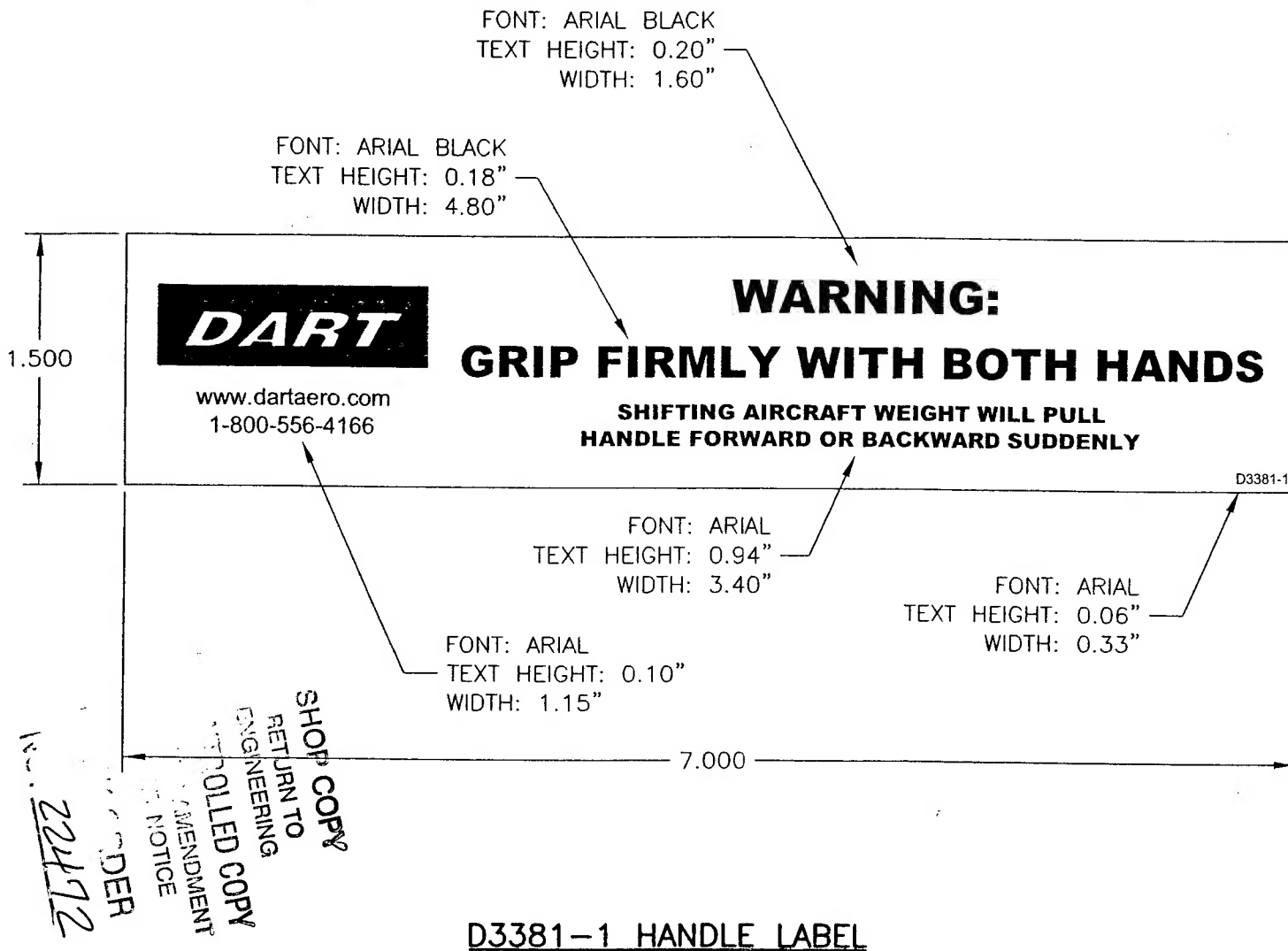
NOTE: Date & initial all entries

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_



PRELIMINARY ISSUE

| DESIGN   | DRAWN BY     | DART AEROSPACE LTD          |
|----------|--------------|-----------------------------|
| 43       | 43           | HAWKESBURY, ONTARIO, CANADA |
| CHECKED  | APPROVED     | DRAWING NO.                 |
| 43       |              | D3381                       |
| DATE     | TITLE        | REV. A                      |
| 04.12.13 | HANDLE LABEL | SHEET 1 OF 1                |
| A        | 04.12.13     | SCALE                       |
|          | NEW ISSUE    | 1:1                         |



**NOTES:**

- 1) MATERIAL: RED LETTERS AND LOGO ON WHITE ADHESIVE BACK VINYL.  
MANUFACTURED FROM 3M 7 MIL MASKING FILM #8522CP OR AVERY IPM #2031  
SIZE IS 7.00" WIDE x 1.50" HIGH
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES

# Job Costing Report

Dart Aerospace Ltd.  
Hawkesbury

Feb 15, 2005  
03:37 pm

|                   |                |                              |                |
|-------------------|----------------|------------------------------|----------------|
| Work Order No     | : 0022472      | Department Code:             |                |
| Project Name      | : D3381-1      | Burden Flags                 | : NNNNNNNN     |
| Project For       | : WK512        | WO Status                    | : Open         |
| Work Order Type   | : Main         | Invoice State                | : Not Invoiced |
| Main WO Number    | :              | Invoice Date                 | :              |
| House Part Number | : D3381-1      | Invoice Number               | :              |
| Description       | : Handel Label | Invoice Amount               | : 0.00         |
| Manufactured      | : Yes          |                              |                |
| Amount Req'd      | : 20           | Order Entry No               | :              |
| Amount Done       | : 0            | OE Value                     | : 0.00         |
| Start Date        | : 02-15-05     |                              |                |
| Est Finish Date   | : 03-10-05     | Est Margin                   | : 0.000%       |
| Act Finish Date   | :              | Actual Margin                | : 0.000%       |
| Drawings Req'd    | : No           |                              |                |
| Ok for Approval   | :              |                              |                |
| Approval Rec'd    | :              | \$0 Posted to Finished Goods |                |

|                   | Estimated | Actual | Var. % | Posted | To Post |
|-------------------|-----------|--------|--------|--------|---------|
| =====             |           |        |        |        |         |
| Material Cost     | : 0.00    | 0.00   | 0.00   | 0.00   | 0.00    |
| Engineering Hours | : 0.00    | 0.00   | 0.00   |        |         |
| Engineering Cost  | : 0.00    | 0.00   | 0.00   | 0.00   | 0.00    |
| Production Hours  | : 0.00    | 0.00   | 0.00   |        |         |
| Production Cost   | : 0.00    | 0.00   | 0.00   | 0.00   | 0.00    |
| Packaging Hours   | : 0.00    | 0.00   | 0.00   |        |         |
| Packaging Cost    | : 0.00    | 0.00   | 0.00   | 0.00   | 0.00    |
| OverHead Hours    | : 0.00    | 0.00   | 0.00   |        |         |
| OverHead Cost     | : 0.00    | 0.00   | 0.00   | 0.00   | 0.00    |
| CNC Hours         | : 0.00    | 0.00   | 0.00   |        |         |
| CNC               | : 0.00    | 0.00   | 0.00   | 0.00   | 0.00    |
| Misc. Hours       | : 0.00    | 0.00   | 0.00   |        |         |
| Misc.             | : 0.00    | 0.00   | 0.00   | 0.00   | 0.00    |
| =====             |           |        |        |        |         |
| Burden            | : 0.00    | 0.00   | 0.00   |        |         |
| =====             |           |        |        |        |         |
| Total Cost        | : 0.00    | 0.00   | 0.00   |        |         |
| Margin            | : 0.000   | 0.000  |        |        |         |
| Selling Cost      | : 0.00    | 0.00   |        |        |         |

|                        | Estimated | Actual |
|------------------------|-----------|--------|
| Labour Hrs/Amount Done | : 0.00    | 0.00   |
| Profits/(Loss)         | : 0.00    | 0.00   |



# Scotchcal™

## Opaque Imaging Media 8522

### Description

This media is specially formulated to dry quickly after printing. Production of outdoor weatherable and long-term indoor durable graphics is now easier than ever. Its changeable adhesive allows easy removal for up to one year.

### Advantages

- Optimized for use with selected Epson Stylus Pro printers and Epson Archival inks.
- Optimized for use with selected HP DesignJet Printers and HP DesignJet Ink System UV or HP83UV Color Ink System
- For making opaque, laminated graphics that are outdoor weatherable and long-term indoor durable
- Media:
  - For opaque (reflective) graphics
  - Changeable, easy to remove from warranted substrates up to 1 year later
  - Dries quickly after printing so the overlaminate can be applied almost immediately
  - Low slippage paper liner for superior tiling
- Overlaminates:
  - Provide additional UV (ultraviolet) and physical protection for making weatherable finished graphics
  - Available in luster and matte gloss
  - Adhesive allows for heat-assisted or cold-temperature lamination

### Applications and Uses

3M™ Scotchcal™ Changeable Opaque Imaging Media 8522 is intended only for ink jet printing and for use with the listed Compatible Products and Equipment and the following applications. Any other application is NOT warranted by 3M or covered by the worldwide 3M™ MCS™ Warranty unless 3M gives its prior written approval for the application.

- First surface images (the image is on top of the film) for opaque posters and signs, including:
  - Graphics for vans, personal vehicles, trucks and buses
  - Novelty posters
  - Retail and point-of-purchase displays
  - Information graphics such as maps and directories
  - Entertainment promotions in museums, zoos, parks, theatres, sports venues
  - Education and presentation graphics

### Product Bulletin 8522

Release F, Effective January 2003  
Black bar in margin indicates a change

- Legal and courtroom exhibits

- For flat or simple curved surfaces, with or without rivets, used in vertical ( $\pm 10^\circ$ ) applications

### Limitations of End Uses

The following uses and applications are specifically NOT warranted.

- Fleet applications in areas that use salt for winter road maintenance
- Application to non-warranted substrates, including wall-board
- Applications subjected to gasoline vapors or spills
- Application to corrugated or highly irregular surfaces or sharply raised areas
- Graphics applied to stainless steel, including stainless steel vehicles
- On flat surfaces with rivets, tenting of 4 to 10 mm around rivets may be expected; rivets may be cut around to eliminate tenting.

Note: Standard ink jet technology is water based. Water-based chemistry is susceptible to the extremes of heat and humidity. This is a factor in most product constructions on the market. Read the Fabrication, Shelf Life and Storage sections in this bulletin. Staying in the middle of these ranges always provides optimum performance.

### Compatible Products and Equipment

#### Thermal Ink Jet Printing Systems

- Epson Stylus Pro 9500, Stylus Pro 10000 printer
  - Epson Archival Inks
- Epson Stylus Pro 10600 printer
  - Epson Archival Inks
- HP DesignJet Printers 2000 and 3000 series
  - HP DesignJet Ink System UV (pigment-based ink)
- HP DesignJet Printers 5000 series
  - HP83UV Color Ink System

#### Overlaminates (required)

- 3M™ Luster Overlaminate 8519 (semi-gloss)
- 3M™ Matte Overlaminate 8520

Note: For the full product names of the 3M products listed on this page, please see page 1.

### Warranted Substrates

Media 8522 is warranted for use on the following rigid substrates.

Some substrates may "out-gas", resulting in tiny bubbles throughout the surface of the graphic. For maximum performance, be sure the substrate you select is properly cleaned and prepared as recommended by the manufacturer. See Instruction Bulletin 5.1 for additional information.

- Alodine (anodized aluminum)
- Automotive panels (automotive painted steel)
- Fruehauf (painted aluminum)
- FRP (fiberglass reinforced plywood)
- Glass
- Imron® (polyurethane-painted metal panel)
- Acrylic
- Sintra™ board

### Test and Approve Non-warranted Substrates Before Use

Media 8522 is not warranted for any substrate other than those listed above. If you want to use it for other substrates, 3M recommends that you test and approve the media for both adhesion and removal characteristics.

### Characteristics

| Characteristic                 | Description  |
|--------------------------------|--|
| Media                          | 7 mil. white, opaque graphic film  |
| Liner                          | Low-slippage, lay flat paper   |
| Adhesive                       | Changeable, pressure sensitive   |
| Thickness (media and adhesive) | 7.5 to 8 mil (nominal)   |
| Application substrates         | See Warranted Substrates, above  |
| Application surfaces           | Flat or simple curved surfaces, with or without rivets, used in vertical ( $\pm 10^\circ$ ) applications (no corrugations) |
| Application temperature range  | 28° to 110°F (-2° to 43°C)<br>(air and surface)  |
| Roll sizes                     | 36" x 45 feet (914 mm x 13.5 m)<br>54" x 45 feet (1372 mm x 13.5 m)  |

## How to Become a 3M Ink Jet Registered Fabricator

Only 3M Thermal Ink Jet Registered Fabricators are eligible to offer 3M MCS warranted graphics. In order to become certified, a fabricator must complete the requirements as specified in the 3M Ink Jet Graphics Registered Fabricator Reference Manual located on the 3M website at [www.scotchprint.com](http://www.scotchprint.com)

### Effective Performance Life

To obtain the warranty given below, the graphics must be made according to 3M's recommendations which are detailed in the Warranty and Limited Remedies on page 3. Also see the section, Removability.

### Warranted Durability

| Media 8522 with Overlaminate 8519 or 8520 | Epson Printers |         | HP Printers |         |
|---|----------------|---------|-------------|---------|
|   | Outdoor        | Indoor  | Outdoor     | Indoor  |
| Applied to Warranted Substrates           | 2 years        | 5 years | 3 years     | 5 years |

### Removability

Imaging media 8522 is removable from warranted substrates for 1 year without the aid of chemical strippers or accessories. Refer to Instruction Bulletin 4.23 for additional information.

### Fabrication

Graphics must be made according to 3M's recommendations which are detailed in the Warranty and Limited Remedies on page 3.

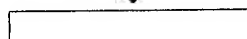
See Instruction Bulletin 4.23 for detailed fabrication, printing and mounting information.

### Graphic Construction Options

#### Opaque (Reflective) Graphics

Opaque graphics made with imaging media 8522 require an overlaminate and an opaque substrate.

Viewer/Light Source



Overlaminate 8519, 8520  
Adhesive on bottom



Imaging Media 8522  
Image on top; adhesive on bottom




Opaque Substrate

Note: For the full product names of the 3M products listed on this page, please see page 1.

## Shelf Life and Storage

- 3M™ Scotchcal™ Changeable Opaque Imaging Media 8522 has a shelf life of one year.
- Storage conditions (new and partially used rolls). For optimum performance, use the middle of these ranges:
  - Original packaging, including plastic wrap
  - Relative humidity of 20% to 80%
  - Temperature of 33° to 104°F (0° to 40°C)
  - Away from direct sunlight
- Do not stack unprotected rolls or lay sharp or heavy objects on them.

## Health and Safety

 **Caution**

When handling any chemical products, read the manufacturers' container labels and the Material Safety Data Sheets (MSDS) for important health, safety and environmental information.

To obtain MSDS sheets for 3M products:

- By fax, call 1-800-364-0768 in the US and Canada or 1-650-556-8417 for all other locations.
- Electronically, visit us at <http://www.3M.com/msds>.
- By mail, or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501.

When using any equipment, always follow the manufacturers' instructions for safe operation.

## Warranty and Limited Remedies

### 3M™ MCS™ Warranty for Graphics Produced on HP DesignJet Printers and Epson Stylus Pro Printers

*The following is made in lieu of all other express or implied warranties, including any implied warranty of merchantability or fitness for a particular purpose: We warrant graphics produced by a 3M Ink Jet Registered Fabricator made with imaging media 8522, printed on an approved HP thermal ink jet printer according to HP's recommendations or Epson Stylus Pro printer according to Epson's recommendations, overlaminated with 8519 or 8520, and applied to a War-ramted Substrate according to 3M's recommendations. These*



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Fax 787-750-3035

graphics are covered against failure caused by ultraviolet light, temperature extremes, pollution, and other elements.

If a graphic fails to perform in accordance with 3M product specifications within this time frame, 3M will replace the materials at no charge. **These remedies are exclusive. In no case shall 3M be liable for any direct, indirect, or consequential damages, including any labor charges.**

## 3M Related Literature

Listed below is related 3M technical literature that may be of interest. You may view and print these Bulletins from our Web site at [www.scotchprint.com](http://www.scotchprint.com), or order them via our Fax-on-Demand (FOD) system. Call one of these phone numbers to order the desired bulletins, and specify the FOD document number provided in the chart.

United States or Canada: 1-800-364-0768

International: 1-651-732-6506

| Subject  | Bulletin No. | FOD No. |
|--|--------------|---------|
| <b>Product Bulletins</b>   |              |         |
| 3M™ Scotchcal™ Overlamine 8519 and 8520  | 8519/8520    | 4524    |
| <b>Instruction Bulletins</b>   |              |         |
| Making thermal ink jet graphics  | 4.23         | 6523    |
| Application, substrate selection, preparation and substrate-specific application techniques    | 5.1          | 7001    |
| <b>Warranties</b>  |              |         |
| <b>Worldwide 3M™ MCS™ Warranty Packet</b><br>(includes all Commercial Graphics MCS Warranties) |              | 9503    |
| Worldwide 3M™ MCS™ Warranty Overview-Folder  |              | 9504    |

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HP and DesignJet are tradenames of Hewlett Packard.

Sintra is a trademark of Swiss Aluminum Ltd.

Imron is a registered trademark of DuPont in the United States

## Bulletin Change Summary

The Epson Stylus Pro Printers 9500, 10000 10600, and Epson Archival Inks have been added to this bulletin. Additional changes resulting from this addition are marked with black bars in the margin.